DOCUMENT RESUME

ED 188 154 CS 005 521

AUTHOR Bernstein, Helene C.
TITLE A Comparison between the Library Skill Knowledge of Two Eighth Grade Student Groups with the Added Variable of Practical Library Experience.
PUB DATE May 80
NOTE 58p.: M. A. Thesis, Kean College

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Educational Research: *Experiential Learning: *Library Instruction: *Library Skills: Masters Theses: Secondary Education: Teaching Methods

ABSTRACT

Two eighth grade classes, each with 22 students, participated in a study to determine if the library skills knowledge of students who had practical library experience along with classroom instruction would be significantly greater than that of students who had the classroom instruction with no library experience. One class was used as an experimental group and the other as a control. Both groups were pretested on their knowledge of library skills and both received instruction through the librarian and classroom teacher using audiovisual aids and worksheets for a period of 16 weeks. The students in the experimental group were provided with the added experience of one 40-minute period per week in the library, where they applied the skills learned during instruction. At the end of the study, all students were posttested and these scores were compared to pretest scores. The results suggest that the library skills knowledge of the students who had practical experience along with classroom instruction was not significantly greater than that of students who had classroom instruction with no library experience. (Appendixes contain copies of the pretest and posttest and of the library skills worksheets used in the study.) (Author/FL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED188154

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A COMPARISON BETWEEN THE LIBRARY SKILL KNOWLEDGE OF TWO EIGHTH GRADE STUDENT GROUPS WITH THE ADDED VARIABLE OF PRACTICAL LIBRARY EXPERIENCE

by

Helene C. Bernstein

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Helene C. Bernstein

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Submitted in partial fulfillment of the requirement
for the Master of Arts degree in Education at
Kean College of New Jersey
May 1980

CS005521

Unquestionably the library has as definite a place in the junior high program as any subject offered. It is an indispensable integral factor in enlarging the pupils' world by giving service in enriching the curriculum, in offering encouragement and guidance in worthwhile reading and in affording opportunities for pupil growth by actual participation in building up the library and in increasing its service.

C.H. Pygman, Nation's Schools, October, 1939

Acknowledgements

I would like to thank Mrs. Betty Brandenburg, Hillsborough Middle School librarian, for her valuable knowledge and time in helping me prepare teaching materials and lessons for this research paper.

I would also like to thank forty-four of my very cooperative eighth grade students for completing countless worksheets and providing me with the feedback I needed to make this experiment possible.

Table of Contents

	Page
Acknowledgements	iii
Abstract	ii
Table of Contents	
List of Tables	i
A Comparison Between the Library Skill Knowledge of Two Eighth Grade Student Groups With the Added Variable of Library Experience	
Introduction and Significance of Problem	1
Hypothesis	4
Instructional Procedures and Sample	4
Definitions, Assumptions and Limitations	5
Specific Procedures	5
Results	9
Conclusions and Implications	11
A Comparison Between the Library Skill Knowledge of Two Eighth Grade Student Groups With the Added Variable of Library Experience: Related Research	12
References	22
Appendix A: Library Skill Pre- and Post-tests	23
Appendix B: Library Skill Worksheets	32

List of Tables

Table		Page
Table I:	Experimental and Control Sample Beginning Scores of Library Skill Knowledge	9
Table II:	Experimental and Control Results of the Samples	9
Table III:	Library Skill Pre- and Post-test Statistics of Control Group	10
Table IV:	Library Skill Pre- and Post-test Statistics of Experimental Group	10

Introduction and Significance of Problem

There is a legitimate need for more students to become aware of what is found in a library, what skills are needed to use a library successfully and, most important of all, to possess the ability to apply those skills to school assignments and other areas of learning. In reference to this last item, a research project was conducted (Adams, 1972) that dealt with grade level, grade point average, a formal library science class and reading achievement levels of junior high school students. These were studied in direct relation to library attitude, usage, skills and knowledge. Adams found that girls were higher academic achievers than boys, and students who had taken library science classes were more studious. Although students knew the card catalog was useful, they did not know how to use it. A problem was found with dictionary skills. Periodicals were chosen according to the students' interests and "The Readers' Guide" was found to be the least used reference aid. Skill in using reference books was definitely increased by taking a formal library class.

Many times there is a serious emphasis placed on writing skills at the junior high level. In writing a report, looking for a book to review, searching for references, or any of several reasons, a student must use a library. To do well on such related assignments, appropriate library skills should be utilized. Therefore, the teaching of appropriate library skills, their usage and their application should be an important component of a language arts,

English or reading curriculum. A major purpose of another study (Alexander, 1972) was to determine the level of achievement in selected library skills, which library skills were possessed by students and which needed to be taught. A test revealed that entering freshmen possessed a selected list of library skills at the 47th percentile, and this was evaluated as inadequate for independent library research. Instruction in library skills, techniques and procedures, and the availability of a central library staffed by a trained librarian increased academic achievement of students at all levels of schooling. Library instruction was most effective when the skills were reviewed regularly for the students. Library instruction was best planned when accurate data was available regarding the students' levels of achievement in library skills. There were a commonly held group of library skills which were considered basic for independent library research by the profession.

Also, a study (Lubans, 1975) involing a questionnaire was sent to students in order to evaluate their knowledge of systematic literature search techniques. To find a term paper topic, the random group tended to browse in the library, leaf through a textbook and asked instructors for suggestions. In refining a topic on which the students wrote, they usually went to the subject card catalog. That was done with the students doing background reading in subject encyclopedias. Some took the browsing approach, which was stated as probably the most inefficient way to refine a topic. Students usually found books by the direct approach

of using the subject card catalog.

Another important element in any successful library program apparently is the librarian. A study (Reveal, 1976) was conducted on the premise that additional cooperation between the librarian and classroom teacher promoted acquisition of library skills. An experimental group was taught some units of library instruction by a classroom teacher-librarian teaching team. The control group received their library instruction from their regular teacher. Pre- and post-test scores on a test of library skills revealed that both groups made significant increases in their acquisition of library skills. The experimental group made the greatest increase in the number of correct answers on the library skills test.

Perhaps, schools might consider the establishment of a formal library class, once or twice a week, extending down into the early primary grades. This kind of class could be continued through high school. Team teaching between the librarian and classroom teacher could be encouraged. In this way, our students should develop a strong learning base in library skills. They would then probably have the ability to enter a library with the confidence and competence they need to use it successfully since research (Adams, 1972; Alexander, 1972; Lubans, 1975) suggests that students do not have such competence or confidence. Various methods need to be utilized in teaching library skills as noted above since the utilization of information is not necessarily good.

Hypothesis

To provide additional evidence concerning this topic, a study was conducted to determine if students indicated a better knowledge of library skills with the added variable of practical library experience. It was hypothesized that the library skill knowledge of eighth grade students who had classroom instruction along with practical library experience would be significantly greater than students who had the classroom instruction with no library experience.

Instructional Procedures and Sample

At the beginning of the school year, two classes of 22 eighth grade students were pretested on their knowledge of library skills with the cooperation of the school principal. These students were from a rural, residential school district.

One class of 22 was used as the experimental group; the other was used as the control group. Both groups received library skill instruction through the librarian and classroom teacher utilizing audio-visual aids and worksheets for a period of 16 weeks. The experimental group was provided with the added experience of one forty minute period a week in the library. The students used the library period to apply those skills learned in class.

At the end of the research study, the students were posttested. Pre- and post-test scores on a test of library skills were compared statistically using the mean, standard deviation and t-tests.

The classroom teacher and librarian worked together closely to develop worksheets and provide classroom instruction for the experimental and control groups. They also developed and guided the library period that was used for the experimental group.

Definitions, Assumptions and Limitations

Definitions

library skills - defined as the knowledge and application of materials and their use in a library

Assumptions

1. A regular dictionary is used mostly as a classroom aid rather than a library aid, so it will not be included in this research paper.
2. Students have some prior knowledge of library and alphabetization skills.
3. Pre- and post-tests will be valid and reliable.
4. A random sample of the population will be involved in the research.

Limitations

1. The school population is characterized as white middle class.
2. The short period of time to conduct the research will have an effect on the results of the study.
3. The researcher has no knowledge as to the amount of previous library experience the students involved in the study have had.

Specific Procedures

Each child in the control and experimental groups was pre- and post-tested on library skills. The library skill instruction was identical for each group; however, the experimental group was given the opportunity to visit the library and apply those skills learned during instruction. A variety

of materials was used to teach library skills, including worksheets; audio-visual aids; and various actual library aids, such as the card catalog, systems for shelving books, almanacs, indexes, special dictionaries, atlases and special encyclopedias. Every library skill lesson is described in detail following. The library skill pre- and post-test can be found in Appendix A. The library skill worksheets can be found in Appendix B.

The use of the card catalog was the initial skill taught. The librarian came into the classroom and gave a mini-lesson, using the overhead projector, explaining to the students about the three types of cards found in the card catalog; what kind of card students should look for to answer specific types of questions; and, once they have decided on the type of card to look for, how they should decide which drawer to look in to locate it. Both groups were given an information sheet on the card catalog, a worksheet on specific catalog cards and a worksheet on locating cards in the catalog drawers. On the worksheet concerning the catalog cards, the experimental group was also required to provide the call number of the particular catalog card. This would require the students to actually look for the title, subject or author card in the card catalog, not just speculate as to what kind of card they would locate to answer the questions. On the worksheet about choosing a particular drawer to look in, the experimental group went into the actual card catalog drawers to locate their title, subject or author card. The control group had to choose from a card catalog diagram. In essence,

the control group had no realistic method of double checking themselves; the experimental group did.

The second library skill taught was how to use shelving systems for non-fiction (Dewey Decimal), fiction and biographies. Again, the librarian came into the classroom and gave a mini-lesson using the overhead projector. Each student was given information sheets and worksheets on shelving systems used in the library. The experimental group went to the library, looked up the non-fiction, fiction and biography titles in the card catalog, and listed the call numbers in either numerical or alphabetical order. The control group was provided with a key sheet of call numbers and was instructed to place them in correct numerical or alphabetical order. The experimental group had to utilize card catalog skills to complete the worksheets. Both groups utilized alphabetization and numeric order skills.

The next library skill taught was the use of the almanac. The researcher gave a classroom lesson supplemented with a filmstrip covering the almanac. The students were then given worksheets on "The World Alamanc" and the "Information Please Alamanac." Both groups were required to circle a key word or phrase that they would refer to when looking in an almanac to answer specific questions found on the worksheets. The control group stopped at this point. The experimental group visited the library, used both almanacs and answered the questions on the worksheets.

The fourth library skill taught was the use of the index, namely "The Readers' Guide to Periodical Literature." The

researcher presented a lesson to the students supplemented with a filmstrip on "The Readers' Guide." The experimental group was then given a worksheet on the guide to complete in the library; the control group did not have this experience.

Another skill taught was the use of special dictionaries. Many students were unaware of the fact that they could refer to specialized dictionaries when researching, other than the standard classroom dictionary. The researcher brought several special dictionaries into the classroom and explained their uses to the students. Each student received a worksheet and was instructed to circle a key word or phrase that they would refer to when looking for answers to specific questions found on the worksheet. Next, the students were required to take a close look at each question and attempt to decide which dictionary they would refer to when answering the questions. The control group stopped at this point. The experimental group used the special dictionaries in the library to answer the questions on the worksheets.

The procedure described above used for the special dictionaries was also used for instruction of the atlases and special encyclopedias.

Pre- and post-tests were scored. The mean scores of the control and experimental groups were compared, using a t-test, to determine if the practical library experience made any difference in the acquisition of library skill knowledge.

Results

As can be seen in Table I, the experimental and control samples, having been established by random placement, were closely matched at the outset of the study on library skill

Table I

Experimental and Control Sample
Beginning Scores of Library Skill Knowledge

	M	S.D.	t
Experimental sample	38.0	4.41	.96
Control sample	39.5	6.04	

knowledge. While the control sample had a slightly higher mean, the resulting t indicated that the difference was non-significant.

Table II, showing the mean score on the test of library skills at the end of the experimental period, indicated no significant differences between the mean score of the two

Table II

Experimental and Control Results of the Samples

	M	S.D.	t
Experimental sample	37.5	5.12	.82
Control sample	36.0	6.51	

samples. A small loss (.5) in the mean score of the experimental sample and a 3.5 loss in the mean score of the control sample suggests that regression toward the mean has occurred in the test results of the samples. Since

the loss was less for the experimental sample, it might suggest that library skill practice had a positive effect--maintenance of skill. The results also suggest that no useful knowledge or even improvement of skill occurred in the intervening time of instruction. It is more probable that neither suggestion is real, but rather that the test of library skill knowledge had a low reliability.

As can be seen from Table III, the t resulting from a comparison of the pre- and post-test means of the control group was computed to be 1.80, indicating that the loss in

Table III
Library Skill Pre- and Post-test Statistics of Control Group

	M	S.D.	t
Pre-test	39.5	6.04	1.80
Post-test	36	6.51	

score value was not statistically significant. It,however, is approximately significant at the .01 level of 1.96.

As can be seen from Table IV, the t comparing the pre- and post-test means of the experimental group was computed

Table IV
Library Skill Pre- and Post-test Statistics of Experimental Group

	M	S.D.	t
Pre-test	38	4.41	.34
Post-test	37.5	5.12	

to be .34. also indicating an insignificant difference between the two scores.

Conclusions and Implications

The results suggest that the library skill knowledge of eighth grade students who had classroom instruction along with practical library experience was not significantly greater than students who had the classroom instruction with no library experience.

Results of this study imply several things. Perhaps, one forty minute period per week in the library was not enough to acquire better library skills. The higher mean score on the pre-test as opposed to the lower mean score on the post-test might be attributed to a low reliability of the tests used to measure library skill knowledge, or to a low correlation between the forms of the tests utilized for pre- and post-testing. The latter is difficult to accept since the forms were identical, differing only in the utilization of different authors' names, books and titles.

A Comparison Between the Library Skill Knowledge of Two Eighth Grade Student Groups With the Added Variable of Practical Library Experience: Related Research

A research project conducted by Golden V. Adams Jr. (1972) dealt with grade level, sex, GPA, a formal library science class and reading achievement level of junior high school students. These were studied in relation to library attitude, usage, skill and knowledge. Library materials evaluated to obtain statistics for this study were the card catalog, vertical file, periodicals and reference books. It was found that girls were higher academic achievers than boys, and students who had taken library science classes were more studious. Students possessing higher reading ability showed a greater interest in hardbound books and boys generally preferred paperbound books. Although the students knew the card catalog was useful, they did not know how to use it. A problem was found with dictionary skills. Periodicals were chosen according to the students' interests and "The Readers' Guide" was found to be the least used reference aid. Two main finding tools used by students were browsing and requesting library assistance. Skill in using reference books was definitely increased by taking a formal library class.

Seven basic recommendations developed out of Adams' research. A continuing curricular program in library science should be established. Teacher inservice programs for the purpose of evaluating their personal skills and knowledge in the use of the library was necessary. The teachers were urged to visit the school library, recommend books and materials for their subject specialties and encourage students to use the library facilities under teacher supervision with

assistance from the librarian. Special library sessions should be encouraged for students with lower ability, and provisions should be made to work with them in small groups according to the specific problems and abilities of the students. It was deemed imperative that the parents of school districts be involved. The importance of books should be impressed, as well as other materials, and means should be made available so that parent(s) can work with their children through the library program. A unified library program should be developed based on the specific needs of the students. It should involve qualified teachers, librarians and parents to make it a success. Every student should be made to feel welcome in the library facility and student assistance can also play a major role in the success of library use.

Malcolm D. Alexander (1972) did a research study to determine the level of achievement in selected library skills for college freshmen, and to determine which skills, as indicated by a test, were possessed by those freshmen and which skills needed to be taught. The test revealed that entering freshmen possessed a selected list of library skills at the 47th percentile, and this was evaluated as inadequate for independent library research. Instruction in library skills, techniques and procedures, and the availability of a central library staffed by a trained librarian increased academic achievement of students at all levels of schooling. Library instruction was most effective when the skills were reviewed regularly for the students. Library instruction

was best planned when accurate data was available regarding the students' levels of achievement in library skills. There were a commonly held group of library skills which were considered basic for independent library research by the profession.

Some of Alexander's recommendations follow. A study of the population used should be undertaken to establish the correlation between library skills and academic achievement as indicated by rank scores of their four years of academic work. Studies similar to this one should be undertaken for sophomore, junior and senior groups at the institution used. A posttest should be administered to the test group used in this study to determine the effectiveness of the library orientation which they received. Further research of the literature should be undertaken to refine the basic list of library skills generated in this study and to place them in a priority of importance. Instruction should be given in the specific skills of using the arrangement of headings in the card catalog, increasing student ability to select reference sources and periodical indexes to meet their specific research needs, and increasing the students' understanding of basic abbreviations used in library research. Further study should be done on the analysis of the discrimination value of the 50th percentile chosen as the standard for minimum performance on the Ethel M. Feagley test.

Denise Reinke Fischer (1976) used a 40 student sample from an entering freshmen class at a high school to evaluate library skills instruction in elementary and secondary schools.

A questionnaire was sent to 61 schools previously attended by students in the sample to gather information on their library instruction progress. The subjects were given a reading test and a library skills test early in the term prior to any library instruction. No significant difference could be determined between the library skills of students who had received formal library instruction and those who were trained informally. It was shown, however, that the formally trained students scored higher in some areas. There was an implication that formally trained students were more prepared for the course work ahead than the informally trained students.

It was recommended that each senior high school curriculum institute a library skills course to prepare students for the individualized studies awaiting them. The researcher feels that the subject matter discussed is of great importance and should be pursued on a higher level as justification for a standardized library skill curriculum. This study did not concentrate on the role of the teacher interest in the pursuit of library skills. However, the researcher feels that without proper motivation and encouragement to use the library facilities, even a prescribed curriculum is doomed to failure.

Charles I Bradshaw (1971) conducted a research study dealing with knowledge of the workings of the card catalog. He dealt with six aspects: filing rules; call numbers; cross-referencing; author, title and subject cards; tracings; and the book entitled "Subject Headings Used in the Dictionary Catalogs of the Library of Congress."

Undergraduate university students took a pretest to show in which of the six areas of the card catalog they needed instruction. The students then followed an instruction outline in each of the critical areas as indicated by the pretest results. Students were permitted to spend as much time as was necessary before taking the posttest. The scores of the pre- and post-test were compared to measure the gain of each student. It was determined from the research that there was a close correlation between students' score on the posttest (84% average) and the ability to use the card catalog.

A timed comparison was made between two methods of searching by Richard J. Ortiz (1973). Five bibliographic searchers timed themselves while searching by possible main entries in the National Union Catalog. The authors then timed themselves searching the same items by title in the English Language Books and in the Library of Congress National Program for Acquisitions and Cataloging (LC NPAC) depository card file.

Comparisons revealed that for a sample size of 771 items, searching by main entries in the National Union Catalog was 89.3 percent slower than searching by title in the LC NPAC file, and it was 84.8 percent slower than searching by title in the English Language Books by title. The results concluded that main entry searching is more time consuming than title searching.

John Lubans, Jr. (1975) developed evaluation instruments for discovering present student and faculty library use, and faculty attitudes toward the library with the idea of comparing

student use patterns before and after the library instruction program. A student questionnaire was sent to a random university wide sample that evaluated students' knowledge of systematic literature search techniques. Faculty were also questioned on their own needs for information about library materials and search techniques, their surmises about student library knowledge and skills, and any instruction they may have given students about using resources in their fields.

Many findings were discovered pertaining to students. To find a term paper topic, the random group tended to browse in the library, leaf through a textbook and asked instructors for suggestions. In refining a topic on which the students wrote, they usually went to the subject card catalog. That was done with students doing background reading in subject encyclopedias. Some took the browsing approach, which was stated as probably the most inefficient way to refine a topic. Students usually found books by the direct approach of using the subject card catalog.

Findings were also discovered pertaining to faculty. Few faculty believed students had the necessary library skills. Faculty also strongly believed that there should be formal instruction in library skills and techniques through the librarian, teacher or by both as a team. Some findings suggested that instructors might benefit from and be receptive to bibliographic instruction themselves.

James Harlan Shores (1970) conducted a research study to develop and try out two forms of a short (40-50 item) diagnostic test in five skill areas: library use, dictionary

use, use of references, reading graphs and tables, reading maps. Shores developed the diagnostic test items, interviewed item try-out, did an item analysis, constructed form A, did an item analysis on form A, revised form A (renamed form 1), constructed form 2, tried out form 2, constructed follow-up tests in the five areas and tried out the follow up tests, in that order.

Shores concluded that the development and use of the test was feasible, teachers can use the test results as an aid to instruction and that more effort should be taken in further developing a rough diagnostic measure for study skills/research skills.

Shores recommended that form 1 and 2 be revised and should be tried with a larger and more diverse population. The five follow-up tests were scarcely tried. A second form for each of the follow-up tests should be devised and the longer ones need to be adjusted. Shores also suggested methods and instructional materials to coincide with the tests. It was recommended that the entire diagnostic and remedial program be tried.

The premise that additional cooperation between the librarian and classroom teacher promoted the acquisition of library skills was investigated (Reveal, 1976). Twenty senior high school students in two small high schools served as the target population for this study. The experimental group was taught some units of library instruction by a classroom teacher-librarian teaching team. The control group received their library instruction from their regular

teacher. The course outline used during instruction was the same for both groups. Pre- and post-test scores on a test of library skills were compared statistically using the mean, standard deviation and t-tests.

Both groups made significant increases in their acquisition of library skills. The experimental group made the greatest increase in the number of correct answers on the library skills test, which was used as a measure of the gains made in learning library skills. The significance of the difference in student scores between the pre- and post-tests indicated the importance of providing students with instruction in library skills.

Reveal recommended that the librarians and classroom teachers continue their cooperative teaching. Library instruction should include units on search skills and retrieval techniques to help users locate and utilize available information. Alphabetizing rules, shelving arrangements and other library rules which are contrary to general practice should be identified. Methods to change or minimize these problems should be developed.

While searching for related literature, the researcher found a lack of information on the subject of library skills per se (Alexander, 1972). There was a basic agreement among researchers in favor of a continuing library science curriculum in schools (Adams, 1972; Fischer, 1976; Shores, 1970; Lubans, 1975). Teacher inservice programs emerged as a necessary component to enable the successful teaching of library skills (Adams, 1972). Research supported the fact

that involving the librarian in instruction can make the difference in the acquisition of library skills (Alexander, 1972; Lubans, 1975; Reveal, 1976; Adams, 1972).

Many research studies used the pretest, instruction, posttest method, in fact, the same method being used in this research study (Alexander, 1972; Fischer, 1976; Bradshaw, 1971; Reveal, 1976). Another researcher even constructed a diagnostic test in five skill areas to determine students' weaknesses and strengths in library skills.

All the studies seemed to involve trying to determine which library materials should be emphasized in instruction, efficient methods to use a library and what the teacher and/or librarian can do to make using a library automatic for students. The general consensus was that many students lacked library skills knowledge.

References

Adams, Golden V. A Study: Library Attitudes, Usage, Skill and Knowledge of Junior High School Age Students Enrolled at Lincoln Junior High School and Burns Union High School, Burns, Horney County, Oregon. U.S., Educational Resources Information Center, ERIC Document ED 077 538, 1972.

Alexander, Malcolm D. A Measure of the Library Skills of High School Graduates of Washington State as Demonstrated by Freshmen of Central Washington State College. U.S., Educational Resources Information Center, ERIC Document ED 081 441, 1972.

Bradshaw, Charles I. Using the Library: The Card Catalog. U.S., Educational Resource Information Center, ERIC Document ED 062 992, 1971.

Fischer, Denise R. A Study of Library Skills Instruction of Entering Freshman to St. Francis Seminary High School. U.S., Educational Resources Information Center, ERIC Document ED 130 670, 1976.

Lubans, John Jr. Program to Improve and Increase Student and Faculty Involvement in Library Use. U.S., Educational Resources Information Center, ERIC Document ED 114 097, 1975.

Ortiz, Richard J. Bibliographic Searching: Main Entry Vs. Title Access, A Comparative Time Study. U.S., Educational Resources Information Center, ERIC Document ED 112 950, 1973.

Reveal, Arlene Hadfield. Library Instruction and Team Teaching. U.S., Educational Resources Information Center, ERIC Document ED 144 604, 1976.

Shores, James Harlan. Development of Diagnostic Instruments for Research Study Skills in Grades 4, 5 and 6. U.S., Educational Resources Information Center, ERIC Document ED 053 224, 1970.

Appendix A

Library Skill Pre- and Post-tests

Pretest

Card Catalog

Decide in which drawer of the card catalog you would look to find the answer to each of the following questions. Place the letter(s) of the drawer on the line before the question.

A-B	H-J	N-P	T
C-E	K-L	Q-R	U-W
F-G	M	S	X-Z

_____Who is the author of Shogun?

_____What are some books by James Michener?

_____Does the library contain any books about airplanes?

_____Who is the author of The Black Stone?

_____Does the library contain any books on the natives of South America?

Decide which kind of card you would look for in the card catalog to answer the following questions. Place the letters A for author, T for title and S for subject on the line before the question.

_____Are there any books about surfing in the library?

_____Is I'll Dance if I Can a factual book?

_____In what city does the book Dear Susan take place?

_____What books by John Steinbeck does the library have?

_____Who is the author of Centennial?

Dewey Decimal System

Using the call numbers on the catalog cards below, put the numbers on the cards in numerical order. If two numbers are the same, use the letters. Place the numbers in numerical order on the lines below.

796.332 M	591.5 P	301.31 S	612 A	636.8 L	796.34 D	591.9 F

598.1 R	301.453 B	616.8 H	796.7 W	301.45 C	595.79 D

599.7 L	636.7 T	301.31 C	796.7 Y	612 T	599.7 D	598.1 A

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Encyclopedia

Decide which volume of the encyclopedia pictured below would contain information to answer each question. On the line before each question, write the number of the volume in which you would look for the answer.

A	B	C-Ch	Ci-Cz	D	E	F	G	H	I	J-K	L	M	N-O	P	Q-R	S-Sn	So-Sz	T	U-V	W-Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

_____How large is South Carolina?

_____What did John Dewey contribute to education?

_____Are all tarantulas dangerous?

_____Can cats see in the dark?

_____Who were some famous pilots?

Guide Words

Use the guide words at the top of the pages below to determine if the topic or word you would have to refer to is on those pages. Write YES if it would be found on the pages, BEFORE if it would be found before the pages, and AFTER if it would be found after the pages.

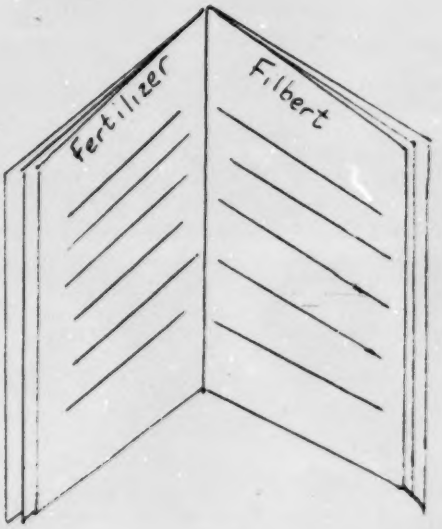
W.C. Field's Movies_____

ferns_____

Where Figs are Grown_____

fishing_____

President Filmore's Life_____



Index

Cheetah, anatomy, 64, 67; hunting method, 68-70; speed, 69.
See also Leopard.
Deer, 36, 48
Dikdik, 41-43, 46. See also Deer.
Hyena, attack on wildbeest, 82-83; smell, 83
Leopard, anatomy, 74; color, 75; killing method, 76; prey, 75-76
Livingstone, David, 127
Nile system, 123, 134-136
Scavengers, See Hyena.

Answer the following questions using the sample index above.

On what pages would you look to find information about the animals leopards prey on?_____

What cross-reference is given to help you find more information about the cheetah?_____

On which pages would you look to find information about scavengers?_____

Where would you look to find out how fast a cheetah can run?
_____

On which pages would you look if pages 41-43 and 46 did not give all the information you needed about the dikdik?_____

How many main topics in this index have subtopics?_____

Reference Aids

Decide which of the following reference aids would be the best one to use to help you answer each of the questions listed below. Put the number of the reference aid on the line before each question.

1. atlas 2. encyclopedia 3. card catalog 4. almanac

____How far west of Alaska do the Aleutian Islands extend?

____How do water locks work on a canal?

____Who won the presidential election in 1960?

____What is solar energy?

____Are there any books about life on the Mississippi River?

____What states border Kansas?

____Who won the World Series in 1953?

____What is the distance between Miami, Florida and Jacksonville, Florida?

____Who wrote Charlotte's Web?

____What people made the earliest known sailboats?

Posttest

Card Catalog

Decide in which drawer of the card catalog you would look to find the answer to each of the following questions. Place the letter(s) of the drawer on the line before the question.

A-B	H-J	N-P	T
C-E	K-L	Q-R	U-W
F-G	M	S	X-Z

_____Who is the author of Trinity?

_____What are some books by John Jakes?

_____Does the library contain any books about the planet Mars?

_____Who is the author of A Little House?

_____Does the library contain any books on volcanoes in Hawaii?

Decide which kind of card you would look for in the card catalog to answer the following questions. Place the letters A for author, T for title and S for subject on the line before the question.

_____Who is the main character in the book Fenton's Landing?

_____What animal is the subject of the book Man's Smartest Friend?

_____What books by Leon Uris does the library have?

_____Are there any books about golf in the library?

_____Who is the author of Evergreen?

Dewey Decimal System

Using the call number on the catalog cards below, put the numbers on the cards in numerical order. If two numbers are the same, use the letters. Place the numbers in numerical order on the lines below.

612.7 R	926.843 Z	929.101 C	303 M	926.843 F	927,843 H

401.45 C	616.6 H	927.03 J	612.89 O	401.456 D	303 T

927.425 A	927.331 C	599.67 D	401.31 C	927.2 K	927.16 T

599.246 A	616.41 S

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Encyclopedia

Decide which volume of the encyclopedia pictured below would contain information to answer each question. On the line before each question, write the number of the volume in which you would look for the answer.

A	B	Ci-Ch	Ci-Cz	D	E	F	G	H	I	J-K	L	M	N-O	P	Q-R	S-Sn	So-Sz	T	U-V	W-Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

_____How large is New Zealand?

_____How deep is the Black Sea?

_____What literary awards has the author James Michener received?

_____What does a skink look like?

_____How long is a gestation period for a lobster?

Guide Words

Use the guide words at the top of the pages below to determine if the topic or word you would have to refer to is on those pages. Write YES if it would be found on the pages, BEFORE if it would be found before the pages, and AFTER if it would be found after the pages.

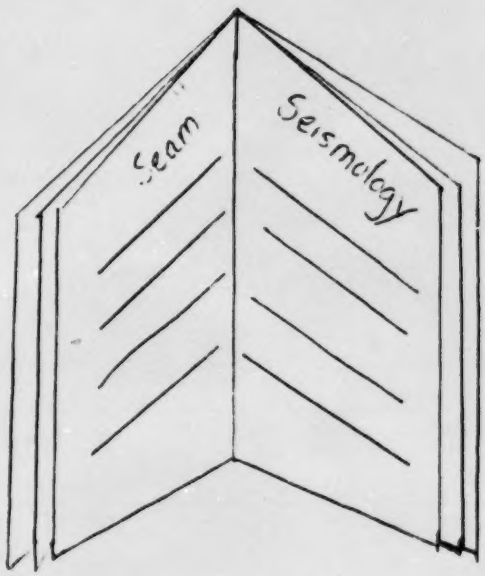
Products of Senegal_____

The Change of the Seasons_____

Where Sea Urchins Live_____

Laura Ingersoll Secord_____

Discovery of Selenium_____



Index

America, daylight saving in, 255-256; morals of, 120-121, 152-154
Capital felonies, 12-13, 92
Children, 202-226; health, 90, 203; at home, 217-229; longevity, 92-93; at work, 230-266. See also Chimney boys.
Chimney boys, 11, 37-65
Churchill, Sir Winston, and daylight saving, 372-377; and Empire promenade, 240-241; and Shops Act, 70-71
Dickens, Charles, 10, 55
Diseases, among children in factories, 125-128; among factory workers, 123-125; medical care for, 128-132
France, and capital felonies, 102-104; and daylight saving, 381; and game laws, 23-24

Answer the following questions using the sample index above.

What cross-reference is given to help you find more information about children?_____

What part did Sir Winston Churchill play in the Shops Act?_____

What was the effect of daylight saving in America?_____

Who led the movement to revoke the French game laws?_____

How were children treated at home?_____

What diseases were most common among the children who worked in factories?_____

Reference Aids

Decide which of the following reference aids would be the best one to use to help you answer each of the questions listed below. Put the number of the reference aid on the line before each question.

1. atlas 2. encyclopedia 3. card catalog 4. almanac

____Which countries border on Switzerland?
____What part did William the Conqueror play in the Battle of Hastings?
____Who won the Academy Award for best actress in 1949?
____What is the distance between Los Angeles and New York City?
____Does the library have any books on atoms?
____What kinds of food do most fish eat?
____In 1970, which city was the largest in the world?
____What was the main export of the United States in 1957?
____How many of the chemical elements can be combined with carbon?
____Who is the author of The Seekers?

Library Skill Worksheets

Card Catalog

The card catalog is the index to everything in the library. This consists of cards filed alphabetically in drawers in a cabinet. Here, materials can be located by author, by title or by subject.

AUTHOR CARD: a card with the author's names on the first line of typing

TITLE CARD: a card with the title of the item on the first line of typing

SUBJECT CARD: a card with the subject of the item on the first line of typing

There is a set of cards for each item in the library. The first card in a set of catalog cards is known as the main entry card. The main entry card is usually the author card.

Key referring to example of author card on next page.

1. Where to look for the book in the library. (We know this from the call number: 617S)

2. Who wrote the book. (The author--Gloria Skurzynski--written on the top line)

3. What the book is called. (The title--Bionic parts for people; the real story of artificial organs and replace-parts)

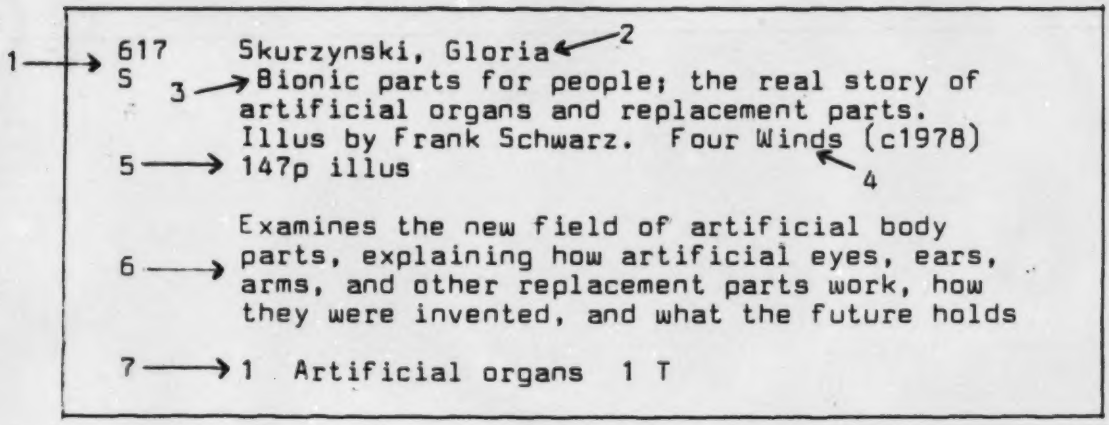
4. By whom the book was published and the copyright date. (Four Winds, c1978) This information about the publishing of the book is called the imprint.

5. What the actual physical book looks like. (It has 147 pages and illustrations) This information about the physical book is called the collation.

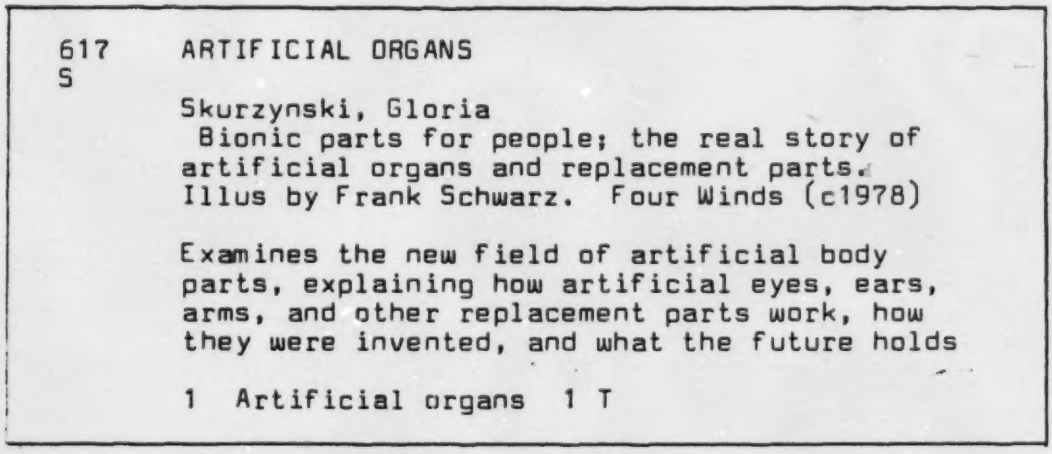
6. That the book "examines the new field of artificial body parts..." This describes the book and is called the annotation.

7. That the subject of the book is Artificial organs. For each subject heading listed here, there is a subject card in the card catalog. This book has only one subject card. There is also a title card for this book in the card catalog. (1 T) The heading listed at the bottom of the card (subject heading and 1 T) are called tracings. The tracings tell you what the book is about, as well as telling you what other cards in the set there are.

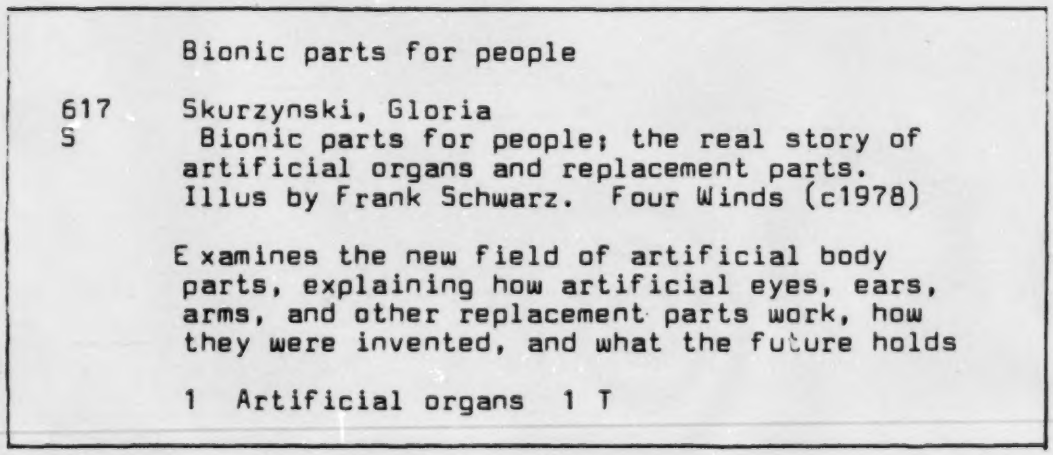
Author Card


617
S
Skurzynski, Gloria
Bionic parts for people; the real story of artificial organs and replacement parts.
Illus by Frank Schwarz. Four Winds (c1978)
147p illus
Examines the new field of artificial body parts, explaining how artificial eyes, ears, arms, and other replacement parts work, how they were invented, and what the future holds
1 Artificial organs 1 T
1
2
3
4
5
6
7

Subject Card


617
S
ARTIFICIAL ORGANS
Skurzynski, Gloria
Bionic parts for people; the real story of artificial organs and replacement parts.
Illus by Frank Schwarz. Four Winds (c1978)
Examines the new field of artificial body parts, explaining how artificial eyes, ears, arms, and other replacement parts work, how they were invented, and what the future holds
1 Artificial organs 1 T

Title Card


Bionic parts for people
617
S
Skurzynski, Gloria
Bionic parts for people; the real story of artificial organs and replacement parts.
Illus by Frank Schwarz. Four Winds (c1978)
Examines the new field of artificial body parts, explaining how artificial eyes, ears, arms, and other replacement parts work, how they were invented, and what the future holds
1 Artificial organs 1 T

Which Drawer Should I Look In?

On the line after each title, author and subject, write the label of the drawer in the card catalog that you would look in to find the corresponding title, author or subject card.

Titles

American Heritage _____

The War on Villa Street _____

Discovery of Africa _____

The Odyssey _____

1001 Questions Answered About Astronomy _____

Mr. Bell Invents the Telephone _____

Birds of the World _____

Who Puts the Print on the Page _____

Make Your Own Dollhouse _____

Forever Free _____

An Awlful Name to Live Up To _____

The Optical Illusion Book _____

Wreck of the Blue Plane _____

Car Racing Against the Clock _____

The Civil War _____

Horns of Plenty _____

A Stranger Came Ashore _____

Up a Road Slowly _____

In a Running Brook _____

The Slave Who Freed Haiti _____

Subjects

Ernest Hemingway _____

Dinosaurs _____

Canada _____

Tennis _____

St. Patrick's Day _____

Flags _____

Voice _____

Space Flight _____

Reptiles _____

U.S. Air Force _____

Authors

Arnold Hano _____

Elinor Parker _____

Joseph Raskin _____

Charles F. Waterman _____

Lucy Kavaler _____

Olivia Vishos _____

Bernice Grohskopf _____

Margaret Landon _____

William Faulkner _____

Martha Sawyers _____

Hillsborough Middle School Library Card Catalog

a-alv	c-cav	e-emp	goa-gyr	k-kyl	mic-mis	q-quo	sib-sny	v-vro
ama-aqu	cel-chu	ena-eze	h-hey	l-lay	muc-myt	r-rhy	so-squ	w-wes
ara-azt	cin-com	f-fix	hic-hit	lea-ley	n-nys	ric-rol	sta-syr	wha-wiz
b-bez	con-cze	fla-fox	hoa-hyp	lib-lyt	o-ozm	rom-ryd	t-ti	wof-wyt
bib-bly	d-dey	fra-fur	i-ivy	m-mbi	p-phy	s-scu	to-tyl	x-zoo
boa-byz	dia-dym	g-glu	j-juv	mcc-mey	pia-pyr	sea-shy	u-uta	

Note: for use with control group

Which Catalog Card Should I Look For?

You have learned that for every book in the library, two, and sometimes three, cards are filed in the card catalog--an author card, a title card, and a subject card. Decide which kind of card you would look for in the card catalog in order to answer the following questions. In the blank before each question, write the letter A if you would look for an author card. Write the letter T if you would look for a title card. Write the letter S if you would look for a subject card.

_____What books about Mars does the library have?

_____Are there any books by Irwin Stambler in the library?

_____Who wrote The Land and Wildlife of Tropical Asia?

_____What books by Bess Streeter Aldrich does the library have?

_____Unions and What They Do was written by whom?

_____Is there a book about the Harlem Globetrotters in the library?

_____How many books about planets does the library have?

_____Does the library have any books by Edmund Findop?

_____Has Nancy Garden written any books besides Berlin: City Split In Two

_____Are there any books about robbers and outlaws in the library?

_____Does the library have the book The Sinking of the Bismarck?

_____What books by Ross R. Olney does the library have?

_____We Can Teach You to Play Soccer was written by whom?

_____Does the library have any books about the War of 1812?

_____How many books in the library were written by Marian Templeton Place

_____What books about Abraham Lincoln can you find in the library?

_____What books besides The Court of the Stone Children has Eleanor Cameron written?

_____Who is the author of In a Running Brook?

_____Who is the main character in the book Freaky Friday?

_____What books would give information about cameras?

Non-fiction Books

In most libraries, non-fiction books are arranged on the shelves according to call numbers in the Dewey Decimal System. This system makes it possible for librarians to group together books on the same topic. Each call number shows a main group number. The first letter of the author's last name appears under each number of a non-fiction book. Books are filed in numerical order. You have learned that substituting zeroes for the empty spaces of Dewey decimal numbers will help you place the numbers in correct numerical order. If several non-fiction books share the same number, they are arranged alphabetically according to the author's initial.

Place the following non-fiction books in numerical order according to their call numbers on the lines below.

A Very Young Rider

This is Pro Football

Start Golf Young

Great Pass Catchers in Pro Football

King of the Road

Coastal Fishing for Beginners

Skiing Cross Country

The Los Angeles Rams

How to Play Better Baseball

The Complete Beginners Guide to Tennis

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Fiction Books

Fiction books are arranged alphabetically by the author's last name. There is a call number label on the spine of each book to make finding a book or shelving a book easier. First, there is an F for fiction. Directly under this is the first three letters of the author's last name.

F (Fiction)
FOR (Forbes, Esther)

Some rules to help you place the call numbers of fiction books in order:

1. Mc or Mac are filed as spelled.

MacDonald	MAC
Mason	MAS
McCormick	MCC

2. Abbreviations are spelled out in full.

Sachs	SAC
St. John	SAI
St. Martin	SAI

3. Disregard punctuation within a name.

Larkin	LAR
L'Engle	LEN
Lenski	LEN

4. It will often be necessary to check the author's full last name to put the call numbers in order.

L'Engle	LEN
Lenski	LEN
Lent	LEN

Fiction Books

Arrange the following groups of author's last names in alphabetical order:

Bond _____	Mazer _____	Sachs _____
Blume _____	MacInnes _____	St. John _____
Burnford _____	McNaughton _____	Shepherd _____
Babbitt _____	McNeer _____	Sutton _____
Byars _____	MacLean _____	Speare _____
Bawden _____	Maupassant _____	Samuels _____
Beatty _____	McNickel _____	Steele _____

Place the following fiction books in order according to their call numbers on the lines below.

The Chocolate Spy

My Darling, My Hamburger

The Last Lap

What About Tomorrow

The Ghost Belonged To Me

Run For Your Life

Wolf Hunt

The Little Lame Prince

Nobody's Perfect

Black and Blue Magic

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Biographies

Biogaphies are arranged alphabetically by the biographee's 1st name. The call number on the spine of biographies has a B for biography. Directly under this is the first three letters of the biographee's last name.

B (Biography)
CAR (Carter, James by Arnold Jones)

Some rules to help you place the call numbers of biographies in order:

1. If biographies are about people with the same last name, go to the first name to determine the alphabetical order.

   Carter, Billy
   Carter, James

2. If there is more than one biography about a person, go to the author's last name to determine the alphabetical order.

   Kennedy, John by M. Miers
   Kennedy, John by F. Sutton

3. If there is more than one biography about a person by the same author, refer to the title to determine the alphabetical order.

   All Creatures Great and Small by James Herriot
   All Things Bright and Beautiful by James Herriot
   All Things Wise and Wonderful by James Herriot

Biographies

Place the following biographies in order according to their call numbers on the lines below.

Bruce Jenner

The Youngest Conquistador

A.J. Foyt: The Only Four Time Winner

Issac Newton

The Search

Young Thomas Edison

Abraham Lincoln: Man of Courage

Marco Polo, the Great Traveler

Mohammed

Philippe Pinel

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Call Numbers

Non-fiction books:

A Very Young Rider	798.2 K
This is Pro Football	796.33 S
Start Golf Young	796.352 F
Great Pass Catchers in Pro Football	796.332 C
King of the Road	796.7 P
Coastal Fishing For Beginners	799.1 C
Skiing Cross Country	796.9 B
The Los Angeles Rams	796.33 M
How to Play Better Baseball	796.357 H
The Complete Beginners Guide to Tennis	796.34 L

Fiction books:

The Chocolate Spy	F ALE
My Darling, My Hamburger	F ZIN
The Last Lap	F GAU
What About Tomorrow	F SOU
The Ghost Belonged to Me	F PEC
Run For Your Life	F PLA
Wolf Hunt	F EDM
The Little Lame Prince	F MUL
Nobody's Perfect	F WES
Black and Blue Magic	F SNY

Biographies:

Bruce Jenner	B JEN
The Youngest Conquistador	B DLI
A.J. Foyt: The Only Four Time Winner	B FOY
Issac Newton	B NEW
The Search	B TOL
Young Thomas Edison	B EDI
Abraham Lincoln: Man of Courage	B LIN
Marco Polo, the Great Traveler	B POL
Mohammed	B MOH
Philippe Pinel	B PIN

Note: for use with control group

INFORMATION PLEASE ALMANAC

Your most important tool in using this almanac is in the back of the book--the COMPREHENSIVE INDEX, which lists alphabetically all the important topics, terms and names covered and gives the page or pages on which they appear.

To find a fact, date, or idea, you should begin by looking under the most specific word. For example, to find the population of Des Moines, you start by looking for Des Moines. However, that city is not listed separately. Therefore, the next step is to look under Iowa or Cities, U.S. Under Iowa, the designated page gives the latest population for Des Moines. Under Cities, U.S., there is a sub-heading, Population Figures, with three alternatives: Fifty largest (of which Des Moines is not one), Largest by state (which refers back to Iowa), and 1920-1970 (where Des Moines is listed alphabetically).

Since the almanac contains so much information, not every fact can be listed in the index. Therefore, if you want to find Daphne DuMaurier's dates, for example, you should try to think of several categories that might include a famous novelist, such as Novelists. Under Novelists you will find an alphabetically arranged list of names, with DuMaurier listed in the appropriate order.

1. What are the principal gases in the Earth's atmosphere?
2. Who designed the Statue of Liberty?
3. How much did the U.S. pay for Alaska in 1867?
4. Who won the Oscar for best movie actor in 1969?
5. What is the address of the U.S. Environmental Protection Agency?
6. In what year were the first modern Olympic Games held? Where were they held?
7. How many countries have nuclear power reactors?
8. Who kicked the longest punt in pro-football history? How far did the ball go?
9. Only one U.S. President was a bachelor. Who was he?
10. What ocean or sea is the shallowest?
11. How many satellites does Saturn have?
12. The Taj Mahal was built in 1648. Who built it?

THE WORLD ALMANAC

The World Almanac is an easy reference book. Questions that you want to answer should be read carefully and key words located. Usually there are two key words. These will be the headings in the index under which information about the topic can be found.

If a subject is of broad interest, it is included in the QUICK REFERENCE INDEX on the last page of The World Almanac. The pages cited include most information related to the topic.

The GENERAL INDEX, on the other hand, is an alphabetical list of the topics that are found in The World Almanac. This is the more useful index since it gives page references to a specific topic. Remember, the GENERAL INDEX is found at the beginning of the almanac.

1. Who lost the election for U.S. President in 1952.
2. Which is the largest lake in your state?
3. How fast can a snail go?
4. What is the official state bird for your state?
5. Who designed the Statue of Liberty?
6. In U.S. currency, whose portrait is on the $100 bill?
7. Which city has more telephones--Dallas or Pittsburgh?
8. How many states have Republican governors?
9. Who was the first American to win a Nobel Peace Prize?
10. The SLBM is a nuclear weapon. What do the letters stand for?
11. What are the school colors of Slippery Roack College?
12. Name three chemical elements discovered since 1956.

THE READERS' GUIDE

1. Underline the names of the following magazines that are listed in The Readers' Guide:

   "Seventeen" "Motor Cyclist" "Sports Illustrated"

   "Teen" "Skateboarder" "Dance Magazine" "Football Digest"

2. What do these abbreviations stand for?

   il

   Je

   bibl

   por

   jt auth

   ed

   +

3. Give the full title of the following magazines:

   Aviation W

   Mech Illus

   Nat Geog World

   Hi Fi

   Field & S

4. Read the entry from The Readers' Guide and answer the following questions:

   What is the heading?

   Is it a subject, title or author heading?

   What is the title of the article?

   What is the author's full name?

   What does il por mean?

   What is the full name of the magazine?

   What is the volume number of the magazine?

   Which pages are listed?

   What is the date of publication?

   FOOTBALL, college
   Rare Scare for the Bear; Alabama vs. Tennessee D.S. Looney.
   il por Sports Illus 51:55-6 O 29 '79.

5. Find two magazine articles on a subject that you are interested in. Fill out a request slip for the magazines that you need. Get the magazines from Mrs. Brandenberg. List the following information pertaining to each magazine article:

   Title of article, author, title of magazine, volume, page(s), date

6. Request an article that is found on microfishe. Use the microfishe reader. List operating instructions for the microfishe reader below.

7. Does our library carry the following magazines? Use the "Periodical Collections" blue book to find out. Place the word YES next to the magazines that our library carries.

   The New York Times Magazine

   Organic Gardening

   Popular Science

   Psychology Today

   Skiing

   Audubon

   Flying

Special Dictionaries

Located in the library are many special dictionaries in addition to the usual classroom dictionary that you normally use. These special dictionaries can be of great help to you when you are doing research. To complete this exercise, you will become familiar with the following special dictionaries:

1. Abbreviations Dictionary
2. Biographical Dictionary
3. Dictionary of Art Terms and Techniques
4. Dictionary of the American Indian
5. Dictionary of Phrase and Fable
6. Dictionary of Scientific and Technical Terms
7. Dictionary of Synonyms and Antonyms
8. Dictionary of Word and Phrase Origins
9. Sports Dictionary
10. Thesaurus

****

1. What is a caduceus a symbol of?
2. There is another name for the bubble point. What is it?
3. Write an adjective synonym for zigzag.
4. What is glove money?
5. Is a tessella small or large?
6. How many different things does DSO stand for?
7. Does an axe cause a surfer to wipe out?
8. Was William Dunlap born in New Jersey?
9. Write two noun synonyms for the word ramble.
10. What does HNO_3 stand for?
11. Does a regatta have something to do with hang gliding?
12. Who is Kumara?
13. Is gambage transparent?
14. Was John King a famous dentist?
15. Can utensil be used as a verb?
16. What is the Zem?
17. When was Red Thunder killed?
18. Write a noun synonym for faintness.
19. Fenberry sauce was first used on which holiday?
20. Is uranium tetrafluoride radioactive?

21. Today, when someone states that they will "go by the board," what do they mean?
22. Do Calouchas come from Arkansas?
23. What is the zoosphere?
24. Can the word resistance be used as a noun, verb and adjective?
25. Gas black has another name. What is it?
26. What does AAHQ stand for?
27. Was Theodore O'Hara an English soldier?
28. Is the sihu important to the Hopi indian?
29. What are all the antonyms for the word hot?
30. What is a third sacker?

Atlases

There are many different types of atlases found in your library. You will often need to look at an atlas to get facts about our earth. That kind of atlas will probably show three main types of maps: physical-natural divisions, such as mountains, lakes, and rivers; political-man-made divisions, such as states, countries, etc.; and economic-special maps on population, rainfall, temperature, etc. In addition to the above atlas, there are many specialized ones that you may need to use for research. The following is a list of atlases that you will be working with:

1. Atlas of Animal Migration
2. Atlas of Body and Mind
3. Atlas of Early Man
4. Atlas of the Oceans
5. Atlas of Plant Life
6. Atlas of the Universe
7. Atlas of World History
8. Atlas of World Wildlife
9. Economic Atlas of the United States and Canada
10. Picture Atlas of the World
11. Road Atlas
12. World Atlas (the most common)

An atlas may contain a gazetteer, which is a geographical dictionary that contains places (seas, mountains, countries, etc.) in alphabetical order. Or a gazetteer may be a separate book, like the following:

13. Geographical Dictionary (can also be classified as a special dictionary)
14. The Stateman's Year-Book, World Gazetteer

****

1. Where is Hagen?
2. Where are red and white blood cells made?
3. During 8000-5000 B.C., what did early man from the western Mediterranean certainly use as part of their hunting equipment?
4. How many stories do the twin towers of the New York Trade Center have?
5. Does Central America contain coniferous forests?
6. Is there farming in Rogaland, Norway?
7. When did the Industrial Revolution begin in Great Britain?

8. What are the four parts that comprise the structure of the earth's atmosphere?
9. Name a rain forest bird from Africa.
10. Where is Mount Democrat?
11. What is the area, in square miles, of Sudan?
12. What is the most direct route from Topeka, Kansas to Wichita, Kansas?
13. How does a jellyfish propel itself?
14. Name two plants that have been spread and taken overseas where they grow successfully in other parts of the world?
15. Do animals that migrate use the same route?
16. What is the name of the square in the middle of the Vatican City in Rome, Italy? Describe it.
17. What are two kinds of meteoroids?
18. Name an ancient ship used by the Vikings.
19. What is the Phyle?
20. Who were two well known people found in the Far East from 1000-500 B.C.?
21. The Manchurian tiger found in the Far East may reach what length?
22. What country is the county Caithness found in?
23. What is the major religion of Sweden?
24. How many miles is Oaklahoma City, Oaklahoma from San Francisco, California?
25. What was the population increase in New Jersey during the Great Depression?
26. When migrating, how long and at what speed do locusts fly?
27. Isthe textile cotton produced in Pennsylvania?
28. Which main body organ acts as a defense mechanism and has the ability to repair damage?
29. What does the topography of Austria look like?
30. What kind of land makes up most of Canada?

Encyclopedias

Like atlases and dictionaries, there are many special types of encyclopedias in the library that may be of some help to you when doing research. In addition, there are also many general encyclopedias. You will become familiar with the following special and general encyclopedias in answering the questions below.

Special:

1. Random House Encyclopedia
2. The Book of Popular Science (index-volume 10)
3. Ocean World of Jacques Cousteau (index-volume 20)
4. Encyclopedia of Animal Life
5. Encyclopedia of Science and Technology (index-volume 20)
6. Pictorial Encyclopedia of Horses and Riding
7. The Britannica Encyclopedia of American Art
8. Encyclopedia of Great Composers of Music
9. Encyclopedia of American Literature
10. Encyclopedia of World Biography (index-volume 12)
11. Life History of the United States (index-back of each volume)
12. Makers of America
13. Encyclopedia of American Facts and Dates
14. Encyclopedia of American History

General:

15. Collier's Encyclopedia
16. Compton's Encyclopedia
17. Encyclopedia Americana
18. Encyclopedia Britannica
19. Encyclopedia International
20. New Book of Knowledge
21. Students Encyclopedia
22. World Book

****

1. List some general information about electrons.
2. What is an airbag?
3. Name one group of immigrants that arrived in the U.S. from 1925-1938.
4. Name one famous composer of music.
5. What are the sensory abilities of the barracuda?

6. What color is a Palomino horse?
7. What are horsehoe crabs often called?
8. What was the play Kiss Me Kate based on?
9. What is the U.S. organization VISTA for?
10. What were the charter colonies of the U.S.?
11. Name a book written by Noah Webster in 1806.
12. What is brown algae?
13. When was Sumner Willes born?
14. What was the Gadsden Purchase?
15. Describe the field of mining engineering.
16. What is the Corioles Force?
17. What is plutonism?
18. Who was Henry Thomas Buckle?
19. What President signed repeal legislation of the Chinese Exclusion laws on December 17, 1945?
20. Were the Midway Islands a site of crucial World War I naval action?
21. Who wrote Absalom, Absalom?
22. Who died in a Dallas prison on January 3, 1967?
23. When was the longshoremen strike in San Francisco?
24. What is Thulium?
25. What is phytoplankton?
26. What is the definition of landscape architecture?
27. What four groups of instruments make up a symphony orchestra?
28. About how many species make up a family of finches?
29. John Sloan was a painter. Where was he born?
30. What is the name of a famous riding master?